Claims

1. A mobile station of a cellular telecommunications system, the mobile station comprising:

an integrated phase locked loop for generating output frequencies;

a frequency control unit for providing a frequency control word for the phase locked loop, according to which frequency control word an output frequency is generated; and

a tuning unit for providing a synchronized tuning word for the phase locked loop, the tuning unit being configured to output the synchronized tuning word into the phase locked loop in synchronization with the output of the frequency control word.

2. The mobile station of claim 1, wherein the phase locked loop includes an integrated voltage controlled oscillator for generating the output frequency proportional to a voltage level inputted into the voltage controlled oscillator; and

wherein the tuning unit is configured to output the synchronized tuning word into the voltage controlled oscillator.

3. The mobile station of claim 2, wherein the voltage controlled oscillator includes a tuning circuit for providing a plurality of frequency tuning configurations, a frequency tuning configuration contributing to frequency characteristics of the voltage controlled oscillator; and

the tuning unit is configured to output the synchronized tuning word for the tuning circuit in order to set a frequency tuning configuration.

4. The mobile station of claim 1, wherein the phase locked loop includes an integrated charge pump for generating an output current proportional to the synchronized tuning word; and

the tuning unit is configured to provide a synchronized tuning word for the charge pump in order to tune the gain of the charge pump.

5. The mobile station of claim 1, wherein the phase locked loop includes a feedback divider connected to the frequency control unit, the feedback divider being configured to generate a feedback signal with frequency proportional to a frequency control word; and

the frequency control unit is configured to output a frequency control word into the feedback divider.

6. The mobile station of claim 1, wherein the tuning unit is configured to output the synchronized tuning word in parallel format to the phase locked loop.

7. The mobile station of claim 1, wherein the tuning unit includes:

a buffer register for receiving a tuning word in a serial format, the buffer register configured to convert the tuning word from the serial format into parallel format;

a setting register connected to the buffer register and the phase locked loop, the setting register configured to receive the tuning word from the buffer register in the parallel format;

the setting register is configured to receive an enabling command, the enabling command enabling the output of the synchronized tuning word to the phase locked loop; and

the setting register is configured to output the synchronized tuning word into the phase locked loop, the output being enabled by the enabling command.

8. The mobile station of claim 1, wherein the frequency control unit and the tuning unit are configured to provide a shared control register for the frequency control word and the synchronized tuning word; and

wherein the shared control register is configured to output the frequency control word and the synchronized tuning word simultaneously.

9. The mobile station of claim 1, wherein the mobile station further comprises a control arrangement configured to provide a first timing signal for the frequency control unit, the first timing signal timing the output of the frequency control word;

the control arrangement is configured to provide a second timing signal for the tuning unit, the second timing signal timing a synchronous output of the synchronized tuning word.

10. The mobile station of claim 9, wherein the control arrangement is configured to switch off a synchronous output of the tuning word.

11. A method of controlling a phase locked loop of a mobile station of a cellular telecommunications system, the method including:

outputting a frequency control word into the phase locked loop, according to which frequency control word an output frequency is generated; and

outputting a synchronized tuning word into the phase locked loop in synchronization with the output of the frequency control word.

12. A method according to claim 11, further including outputting the synchronized tuning word into one element selected from the group including: a voltage controlled oscillator of the phase locked loop, a charge pump of the phase locked loop.

13. A method according to claim 11, further including outputting the synchronized tuning word in parallel format into the phase locked loop.

14. A method according to claim 11, further including: receiving a tuning word in a serial format into a buffer register;

converting the serial format into parallel format;

receiving the tuning word from the buffer register by a setting register in parallel format;

receiving an enabling command by the setting register, the enabling command enabling the output of the synchronized tuning word to the phase locked loop; and

outputting the synchronized tuning word into the phase locked loop, the output being enabled by the enabling command.

15. A method according to claim 11, further including outputting the synchronized tuning word simultaneously with the frequency control word.